

## HOST RECORDS OF SOME WEST PALAEARCTIC TACHINIDAE (DIPTERA)

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The following list is the result of numerous rearings of Tachinidae by ourselves and various correspondents over the past twelve or thirteen years. Many of the records are of previously recorded hosts, but serve to confirm earlier records which in some cases are rather sparse. Others appear not to have been recorded in the past.

The nomenclature and arrangement of the Tachinidae is according to Herting (1984), except for the genus *Phytomyptera* Rondani which follows Andersen (1988). The lepidopterous hosts are listed according to Kloet and Hincks (1972). Unless otherwise indicated:

- (i) records are British,
- (ii) hosts are Lepidoptera and have been determined by the collector whose initials are given in parentheses at the end of the entry,
- (iii) British tachinids were identified by T.H. Ford, but all non-British specimens were submitted to Dr B. Herting for determination by him and by Dr H-P. Tschorsnig.

Under the heading of the tachinid, each entry shows (where full data are available): the number and sex of the parasitoids, which is as far as is known also the number of hosts killed unless the word "brood" is used; the stage at which the host was killed; up to three dates, indicating (a) date of collection of the material, (b) emergence of the parasitoid larva from the host, (c) eclosion of the parasitoid imago, [only two dates = (a) and (c), and only one date = (a)]; the locality (given in full only for the more notable records); the initials of the collector, or collector/identifier if not the same person. The following abbreviations are used in the entries; l. = larva, pp. = prepupa, p. = pupa, a. = adult, b. = brood, em. = emerged. The notes on each species are derived chiefly from Herting (1960).

### Tribe EXORISTINI

**Exorista fasciata** (Fallén). *Zygaena filipendulae* (L.) 2 males, 1 female, pp., 25.vii.76, 27.vii-3.viii.76, Cornwall (M.R.S.); b. of 3 females, pp., 7-8.viii.89, 15.viii.89, Dorset (J.H.P.); *Z. filipendulae* or *lonicerae* (Scheven): 1 male, 1 female, l. or pp., 19.vii.85, 14-20.viii.85, Skye (J.W.); *Arctia caja* (L.): b. of 3 males, 4 females, p., 10.vi.85, 28.vi.85, vii.85, Ayrshire (M.A.H.); *Dasychira fascelina* (L.): b. of 1 male, 1 female, p., 24.vi.60, 31.vii-4.viii.60, Hampshire (E.C.P-C.). Lasiocampidae are the chief hosts of this species, but it has been reported previously from Arctiidae and Zygaenidae. A rearing from Lymantriidae therefore comes as no surprise:

**Exorista larvarum** (L.). *Trichiura crataegi* (L.). 1 male, l., 29.v.49, 15.vii.49, Huntingdonshire (E.C.P-C.); *Philudoria potatoaria* (L.): b. of 3 males, pp. or p., em.ix.34, Argyll (A.M.M.); *Parasemia plantaginis* (L.): 4 males, 5 females, l., p. and pp., 16.vi.84, vii.84, vii-viii.84, Ailsa Craig (I.C.C.); *Tyria jacobaeae* (L.): 2 males, 1 female, pp. and p., 12.viii.77, 25.viii.77, 24.ix.77, Guernsey (T.H.F.). A polyphagous parasitoid of many macrolepidoptera.

**Exorista segregata** (Rondani). *Zygaena carniolica* (Scopoli): 1 male, pp. or p., xi.73, LEBANON [Jabal Kesrouan] (T.B.L.). Recorded especially from Lymantriidae, Lasiocampidae and Arctiidae: we are not aware of previous records from Zygaenidae.

**Exorista grandis** (Zetterstedt). *Saturnia pavonia* (L.): b. of 3 males, pp. or p., 22.viii.74, 8.ii.75, Aviemore, Inverness-shire (W.A.E.); b. of 2 males, 1 female, pp., em. 7.vi.70, Roxburghshire (A.B.). *S. pavonia* is the principal host, but records from *Papilio machaon* L., *Inachis io* (L.), *Smerinthus ocellata* (L.) and *Zygaena purpuralis* (Brunnich) also exist.

**Exorista sorbillans** (Wiedemann). *Minucia lunaris* (Denis & Schiffermüller): 1 female, l., on *Quercus suber*, 9.vi.89, 19.vii.89, FRANCE [Cavalaire, Var] (T.H.F.). Widespread in the subtropics of the Old World and has been recorded from many different Lepidopteran hosts. It is much more polyphagous than *E. grandis*, but the two species are very closely related and difficult to distinguish (B. Herting, personal communication).

**Exorista nova** (Rondani). *Zygaena carniolica* (Scopoli): 2 females, pp. or p., xi.73, LEBANON [Jabal Kesrouan] (T.B.L.). A specific parasitoid of Zygaenidae.

**Parasetigena silvestris** (Robineau-Desvoidy). *Lymantria dispar* (L.): 14 males, 15 females and 2 bs of 1 male, 1 female, l., 6.v.87, vi.87, FRANCE [Var] (T.H.F.). A common and important parasitoid of *L. dispar* and *L. monacha* (L.).

**Bessa parallela** (Meigen). *Yponomeuta padella* (L.): 1 male, l., 29.vi.60, 25.vii.60, Kent (E.C.P-C.). Primarily parasitic on larvae of microlepidoptera, especially *Yponomeuta* species, but it has also been recorded from some Geometridae.

#### Tribe BLONDELIINI

**Medina luctuosa** (Meigen). *Haltica lythri* (Aubé) (Col.: Chrysomelidae): 1 male, a., 4.viii.79, Burton-on-the-Wolds, Leicestershire (W.M.P.). Apparently confined to Halticinae (Col.).

**Medina separata** (Meigen). *Adelia decempunctata* (L.) (Col.: Coccinellidae): 1, a., em. 3.vii.87, Holt Heath NNR, Dorset (M.M.B.). This is the second record from *A. decempunctata* that we have, and it has

also been bred in numbers from *Phyllodecta vitellinae* (L.) (Col. Chrysomelidae) from Yorkshire (Ford, 1989).

**Compsilura concinnata** (Meigen). *Zygaena carniolica* (Scopoli): 3 males, 2 females, pp. or p., ix.73, LEBANON [Jabal Kesrouan] (T.B.L.); *Heterogynis penella* (Hübner): 1 male, pp. or p., 26.vii.84, viii.84, 25.viii.84, FRANCE [Alpes de Haute Provence] (M.R.S.); *Gonepteryx rhamni* (L.): 1 male, p., vi.80, 29.vi.80, 1980, Berkshire (M.R.B.); *Pieris brassicae* (L.): 1 male, p., 2.iv.76, iv.76, 17.iv.76, Yorkshire (W.A.E.); *P. rapae* (L.): 1 female, p., 26.ix.75, 8.vi.76, Lancashire (M.R.S.); *Apatura ilia* (Denis & Schiffermüller) semi-captive culture: 1 male, p., 1983, Gloucestershire (J.McF.); *Aglais urticae* (L.): 2 males 1 female, p., 13.viii.83, 9.ix.83, Middlesex (B.T.P.); *Nymphalis antiopa* (L.): 2bs of 3 (3 males, 3 females overall), l., 2.viii.87, 8.viii.87, 25.viii.87, FRANCE [Alpes-Maritimes] (M.R.S.); *Danaus chrysippus* (L.): 1 male, p., em. i.73, LEBANON [Beirut] (T.B.L.); *Malacosoma neustria* (L.): 3 males (?b.), l., 1985, Sussex (A.R.C.); *Smerinthus ocellata* (L.): b. of 2 females, l., 17.viii.86, 29.viii-1.ix.86, 1987, Hampshire (B.T.P.); *Laothoe populi* (L.): 1 male, l., viii.79, 1979, Berkshire (B.T.P.); *Phalera bucephala* (L.): 19 bs of 1-2 but only 5 males, 2 females, em., l., 9.viii.83, viii.83, ix.83, Hampshire (B.T.P.); 1 female, l., 1985, Sussex (A.R.C.); *Euproctis similis* (Fuessly): 1 male, l., 16.vi.77, 7.vii.77, Nottinghamshire (F.H.); 1 male, l., 16.vii.76, 11.vii.76, Somerset (M.N.); 1 female, l., 22.vi.57, 16.vii.57, Suffolk (E.C.P-C.); *Leucoma salicis* (L.): b. of 1 male, 1 female, l., 4.viii.73, 13.viii.73, 27.viii.73, Lancashire (M.R.S.); *Lymantria dispar* (L.): 2 males, l., 4.vi.85, 1985, FRANCE [Loire-Atlantique] (N.H.); *Cucullia asteris* (Denis & Schiffermüller): 1 male, l., 31.vii.49, 28.viii.49, Surrey (E.C.P-C.); *Acronicta aceris* (L.): 1 female, pp., 28.vii.78, viii.78, 26.viii.78, Middlesex (I.K.B./M.R.S.); *A. tridens* (Denis & Schiffermüller): 1 female, p., 13.ix.77, 5.vi.78, Lancashire (M.R.S.); *A. psi* (L.): b. of 4 males, l., Lancashire (S.C.); b. of 1 male, 1 female, p., 8.ix.76, 8.vi.77, and 1 male, 1 female, p., 8.vii.76, Lancashire (W.A.W.); 3 males, 1 female, p., viii-ix.76, v-vi.77, Lancashire (M.R.S.); *A. rumicis* (L.): 1 male, p., 22.viii.82, iv.83, Hampshire (B.T.P.); plusiine noctuid sp.: 1 female, ?l., 16.viii.85, 16.ix.85, Somerset (E.C.P-C.). Perhaps the most polyphagous of the British Tachinidae, attacking many medium to large sized lepidopterous larvae and some sawflies, especially in the upper field layer and on bushes. Usually solitary but gregarious development in small broods regularly occurs in its larger hosts. Curiously, butterflies nearly always pupate before they are killed, whilst moths are usually killed as larvae. A regular exception to this pattern is seen when the host is an *Acronicta* species, whose overwintering pupae often carry *C. concinnata* through hibernation. Factors other than the means of overwintering seem to be involved, however, one of which may be the difficulty of escape from the dense cocoons or subterranean pupation sites of certain moths.

## Tribe WINTHEMIINI

**Smidtia conspersa** (Meigen). *Epirrita* sp.: 1 male, l., on *Quercus*, 30.v.65, 7.v.66, Palnackie, Kirkcudbrightshire (E.C.P-C.). A species not commonly reared, but 1 female previously recorded from *E. dilutata* (Denis & Schiffermüller) from Buckinghamshire (Ford, 1976).

**Winthemia quadripustulata** (Fabricius). *Cucullia verbasci* (L.): b. of 5 males, 2 females, p., 8-16.viii.85, Warwickshire (K.C.G.). *Cucullia* species are the chief hosts, with a few records from other large lepidopterous larvae.

**Nemorilla floralis** (Fallén). *Agonopterix* sp. on *Peucedanum*: 1 male, l., 30.vii.88, 12.viii.88, 23.viii.88, Norfolk (M.R.S.); *Anthophila fabriciana* (L.): 2 males, l., 22.v.82, 2.vi.82, 7.vii.82, Oxfordshire (M.R.S.); ? *Clepsis spectrana* (Treitschke): 1 female, p., 9.v.82, v.82, 21.vi.82, London (R.A.S.); *Pleuroptya ruralis* (Scopoli): b. of 3 males, 1 female, p., vi.89, vii.89, Northamptonshire (C.D./J.H.P.); ? *Orthosia gothica* (L.): b. of 2 females, l., 12.vii.88, 23.vii.88, Oxfordshire (M.C.S./M.R.S.). This and the following species are probably polyphagous on many microlepidoptera and occasionally on some Noctuidae.

**Nemorilla maculosa** (Meigen). *Pterophorid* sp.: 1 male, p., 1.viii.87,, 14.viii.87, FRANCE [Alpes Maritimes] (M.R.S.). This species and *floralis* probably have the same range of hosts, but vary in their habitat requirements. In the warmer and drier regions of southern and eastern Europe *maculosa* occurs more commonly, but it has not been recorded from Britain.

## Tribe ERYCIINI

**Aplomyia confinis** (Fallén). Lycaenid sp. on low legumes: 2 females, l., 24.vii.74, by 9.viii.74, 21.viii.74, FRANCE [Valderoure, Alpes Maritimes] (M.R.S.). A specific parasitoid of Lycaenidae.

**Nilea hortulana** (Meigen). *Acronicta tridens* (Denis & Schiffermüller): 4 males, 2 females and 2 not em. in 4 bs of 1-3, l. and pp., 13-16.ix.77, 20-30.vi.78, Lancashire (M.R.S.); *Acronicta psi* (L.): 1 male, 2 females, l., 10.ix.77, 14.ix.77, 1.vii.78, Yorkshire (W.A.E.); 4 males, 4 females in 4 bs of 1-3, l. and pp., 20.viii-16.ix.77, ix.77, 22.vi-10.vii.78, Lancashire (M.R.S.); b. of 1 male, 1 female, l., viii.81, 1982, and b. of 5 (2 males, 2 females em.), ix.81, 1982, Cornwall (J.L.G.); b. of 2 males, 2 females, l., 29.viii.84, 15.ix.84, 7-8.viii.85, Edinburgh (M.R.S.); b. of 4 (1 male, 2 females em.), l., 21.vii.79, 1.viii.79, 19-21.vi.80, Berkshire (M.R.S.); b. of 2 males, 1 female, l., 28.viii.76, ix.76, vii.77, Kirkcudbrightshire (T.H.F.). All the species of *Nilea* are chiefly parasitic on *Acronicta* species.

**Epicamnocera succincta** (Meigen). *Pieris rapae* (L.): 1 male, 2 female, p., Autumn 83, Spring 84, 28.v-6.vi.84, Crieff, Perthshire (J.R.M.); *Hadena bicruris* (Hufnagel): 1 male, l., ix.88, v.89, Derbyshire (F.H.). Previously

bred from *P. rapae* (Richards, 1940), attacking the young larvae.

**Cavalieria genibarbis** Villeneuve. *Biston strataria* (Hufnagel): 1 female, l., on *Quercus*, 10.vi.86, vii.86, iv.87, FRANCE [Cavalaire, Var] (T.H.F.). This is apparently the first host record for *genibarbis* (B. Herting, personal communication).

**Phryxe erythrostroma** (Hartig). *Hyloicus pinastri* (L.): b. of 4 males, 4 females, p., 30.vii.86, 26.vi-6.vii.87, FRANCE [Villars-Colmars, Alpes de Haute Provence] (M.R.S.). *P. erythrostroma* is a specific parasitoid of *H. pinastri*, as many as eighteen examples being recorded from one host pupa.

**Phryxe heraclei** (Meigen). *Philudoria potatoria* (L.): b. of 3 males, l., 30.iv.86, 6.v.86, Berkshire (B.T.P.). This species is a specific parasitoid of *potatoria* and has been reared on many occasions. Broods of up to 13 have been recorded (Ford, 1976).

**Phryxe hirta** (Bigot). *Heterogynis penella* (Hübner): 1 male, l., 23.v.74, 24.v.74, 16.vi.74, FRANCE [Digne, Alpes de Haute Provence] (M.R.S.); *Heterogynis* sp.: 1 male, pp., vi.88, 1988, SPAIN [Biel, Zaragosa] (N.H.). The type of *P. hirta* was bred from *H. penella* (see Herting, 1960 for notes on previous misidentifications).

**Phryxe magnicornis** (Zetterstedt). *Zygaena filipendulae* (L.): 1 male, 2 female, pp., 25.vi.78, 13.vii.78, 29.vii.78, Wiltshire (M.R.B.); 1 male and b. of 2 males, pp., 27.vi.76, 28.vi.76, 6-7.vii.76, Gloucestershire (R.R.A.); *Zygaena trifolii* (Esper): 1 male, 2 females, p., 20.vi.48, 2-10.vii.48, Somerset (E.C.P-C.); *Zygaena* sp.: 4 males, 1 female, pp. or p., 18.vi.62, 9-18.vii.62, Gloucestershire (E.C.P-C.); b. of 1 male, 1 female, pp. or p., 1.vi.74, 20.vi.74, Caernarvon (E.C.P-C.); *Opisthograptis luteolata* (L.): 1 male and b. of 1 male, 1 female, p., 2.viii.76, 30.viii.76, 3-19.ix.76, Cornwall (M.R.S.); *Erannis defoliaria* (Clerck): 1 female, l., 15.v.89, 19.v.89, 4.vi.89, FRANCE [Fontainbleau Forest] (T.H.F.). Rather specialised, usually attacking larvae of Zygaenidae and Geometridae.

**Phryxe nemea** (Meigen). *Zygaena graslini* Lederer: 1 female, l., 9.iv.74, LEBANON [Beirut] (T.B.L.); *Gonepteryx rhamni* (L.): 1 female, p., 5.vii.82, 18.vii.82, Hampshire (B.T.P.); *Aporia crataegi* (L.): 1 female, p., 1962, FRANCE [Hérault] (M.R.S.); *Anthocharis cardamines* (L.): b. of 3 males, p., 23.vi.88, 29.vi.88, 17.vii.88, and 1 female, p., 1986, iv.87, v.87, Hampshire (B.T.P.); *Quercusia quercus* (L.): 1 male, 2 females, from 2 l., vi.85, 16.vi.85, vii.85, Suffolk (M.A.H.); *Strymonidia pruni* (L.): 1 female, p., larva in open culture, vi.86, 23.vi.86, 1.vii.86, Hampshire (C.L.W.); 3 males, 1 female, v.83, v.83, 15-27.vi.83, WEST GERMANY [Bavaria] (H.G.S.); *Vanessa atalanta* (L.); b. of 1 male, 1 female, l., 2.viii.76, 10.viii.76, 23.viii.76, Cornwall (M.R.S.); *Epirrita dilutata* (Denis & Schiffermüller): 1 male, 2 females, pp., 1.vi.78, 25.vi.78, 1978, London (R.A.S.); *Operophtera brumata* (L.): 1 female, pp., 1.vi.78, 10.vi.78, 27.vi.78, Berkshire (M.R.S.); *Abraxas grossulariata* (L.): 11 bs of 1-3 (7

males, 9 females em.), 1. and pp., 6.v.79, 5-22.vi.79, 25.vi-10.vii.79, Buckinghamshire (M.R.S.); 1 male, 1., 2.vi.80, 29.vi.80, vii.80, Oxfordshire (M.R.B.); 2 males, 1., 2-8.vi.81, Durham (T.C.D.); 1 male, 1 female, 1., 24.v.82, 12.vii.82, Berkshire (B.T.P.); 1 male, 1., 20.v.74, FRANCE [Seine Maritime] (G.S.); *Apocheima pilosaria* (Denis & Schiffermüller): 1 female, 1., vi.80, 15.vi.80, 1980, Middlesex (M.R.B.); *Erannis defoliaria* (Clerck): 1 male, pp., 12.vi.75, 24.vi.75, 8.vii.75, Cheshire (M.R.S.); 1 male, 1 female, 1., 11.v.75, 23.v.75, 6.vii.75, Kirkcudbrightshire (T.H.F.); 1 female, 1., 2.vi.80, 13.vi.80, 1980, Berkshire (M.R.B.); *Agriopis aurantiaria* (Hübner): 1 female, 1., 15.v.89, 26.v.89, 31.vi.89, FRANCE [Fontainebleau Forest] (T.H.F.); ? *Alcis repandata* (L.): b. of 2 females, 1., 18.v.80, 1980, Berkshire (M.R.B.); indet. geometrid: 1 female, 1., 31.v.71, 3.vii.71, County Clare (E.C.P.-C.); *Dasychira pudibunda* (L.): 1 female, 1., ix.31, Hampshire (T.E.D.P.); *Mamestra brassicae* (L.): b. of 4 males, 2 females, p., 18.ix.75, 24.iii.76, 6-18.iv.86, Yorkshire (T.H.F.); *Lacanobia oleracea* (L.): b. of 1 male, 2 females, p., 1987, v.1988, Dorset (M.M.B.) ? *L. oleracea*: 1 female, 1., viii.83, 3.x.83, Pembrokeshire (A.N.B.S.); ? *Amphipyra* sp.: 1 male, 1., vi.81, 1981, Berkshire (N.H.); ? *Euplexia lucipara* (L.): b. of 2 males, 1 female, 1., 15.viii.76, 1-4.x.76, Lancashire (M.R.S.); *Plusia gamma* (L.): b. of 2 females, p., 30.ix.75, 18.i.76, Cumbria (M.R.S.); 1 male, 1., 26.viii.87, x.87, Gwynnedd (T.H.F.). A polyphagous species, commonly bred in numbers from *A. grossulariata* in Britain.

**Phryxe prima** (Brauer & Bergenstamm). *Zygaena graslini* Lederer: 1 female, 1., 9.iv.74, LEBANON [Hazimiyé, Beirut] (T.B.L.). A specific parasitoid of Zygaenidae.

**Phryxe vulgaris** (Fallén). *Thymelicus sylvestris* (Poda): 2 male, 1 female, 1., 25.vi.78, 11.vii.78, 28.vii.78, Wiltshire (M.R.B.); *Thymelicus lineola* (Ochsenheimer): 2 females, 1., 20.vi.87, 4.vii.87, vii.87, Middlesex (P.W.C.); *Pieris rapae* (L.): 1 male, 4 females, p., x.78, 20.x.78, Berkshire (P.R.W.); 1 male, 3 females, p., 29.viii.78, Derbyshire (F.H.); 1 female, p., 9.ix.73, 4.v.74, 28.vc.74, Cheshire (M.R.S.); *Anthocharis cardamines* (L.): 1 male, p., 30.v.75, 2.v.76, 27.v.76, Gloucestershire (R.R.A.); 1 male, p., vi.83, iv.84, Berkshire (B.T.P.); 1 female, p., 2.vii.86, vii.86, 30.vii.86, Hampshire (B.T.P.); 1 female, p., vi.89, 16.vii.89, Clwyd (D.S.); 1 female, p., 31.v.74, 3.iii.75, 21.iii.75, FRANCE [Var] (M.R.S.); *Aglais urticae* (L.): b. of 1 male, 2 females, p., 27.v.82, 18.vi.82, Oxfordshire (B.T.P.); 1 female, p., 3.viii.87, 20.viii.87, FRANCE [Alpes Maritimes] (M.R.S.); *Hadena bicruris* (Hufnagel): 1 male, 1 female, 1., ix.88, v.89, Derbyshire (F.H.); *Eremobia ochroleuca* (Denis & Schiffermüller): 1 female, pp., 25.vi.78, 15.vii.78, 4.viii.78, Wiltshire (M.R.B./M.R.S.). A parasitoid of larger butterfly, noctuid and geometrid larvae in the field layer, not usually attacking small, hairy or arboreal species. Several generations occur annually from May to October in gardens, waste places and other open habitats.

? **Phryxe vulgaris**. *Evergestis extimalis* (Scopoli): 1 female, l., 3.ix.74, 19.vi.75, Essex (E.C.P-C.); *Cucullia asteris* Denis & Schiffermüller): 1 female, l., 31.vi.49, ix.49, Surrey (E.C.P-C.). The identity of these specimens follows E.C.P-C. but their condition is now too poor for confirmation.

**Bactromyia aurulenta** (Meigen). *Philereme transversata* (Hufnagel) or *Phigalia pilosaria* (Denis & Schiffermüller): 2 males, l., 28.v.77, 3.vi.77, 12.vi.77, Hampshire (A.D.); *Dasychira pudibunda* (L.): 1 male, 3 females, l., ix.31, Hampshire (T.E.D.P.). A fairly polyphagous species, apparently with a preference for larvae of the Drepanidae.

**Pseudoperichaeta nigrolineata** (Walker). *Archips xylosteana* (L.) 1 male, p., 23.v.89, 19.vi.89, FRANCE [Var] (T.H.F.); *Archips rosana* (L.): 1 male, p., 24.vi.76, 30.vi.76, 8.vii.76, Lancashire (M.R.S.); *Cnephasia stephensiana* (Doubleday): 4 males, 2 females, em. 29.vi-9.vii.42, locality uncertain (L.T.F.); *Eurrhypara hortulata* (L.): 1 male, 15.ix.81, 20.v.82, London (R.A.S.); 1 female, pp., ix.76, 23.v.77, Yorkshire (T.H.F.); *Eurrhypara terrealis* (Treitschke): 1 male, l., 18.vii.89, 3.viii.89, 21.viii.89, Cumbria (M.R.S.); indet. tortricid on *Quercus*: 1 male, p., 15.vi.78, 11.vii.78, Berkshire (M.R.S.); *Laspeyresia pomonella* (L.): 8.vii.755, vi.76, Kent (H.B.). A parasitoid of numerous microlepidoptera.

**Lydella stabulans** (Meigen). *Nonagria typhae* (Thunberg): 1 male, p., em. 4.viii.85, Matlock, Derbyshire (F.H.). Chiefly parasitic on the wainscot moths.

**Cadurciella tritaeniata** (Rondani). *Callophrys rubi* (L.): 2 males, 11 females, p., 8.vii.83, v.84, vi.84, Suffolk (M.R.S.); 2 males, 1 female, 22-24.vii.78, 5-10.v.79, 4-7.vi.79, Buckinghamshire (M.R.S.); 1 male, p., 28.vi.78, 9.v.79, Oxfordshire (M.R.S.); 1 female, p., 25.vi.78, 14.v.79, 14.vi.79, Wiltshire (M.R.S.). A specific parasitoid of *C. rubi*. Parasitised host larvae were both swept from open downland and beaten from *Sarothamus* in heathland scrub. The larva overwinters in the host pupa, but erupts to pupate externally in spring.

**Drino inconspicua** (Meigen). *Minucia lunaris* (Denis & Schiffermüller): 1 male, 1 female and b. of 2 (1 male em.), l., on *Quercus suber*, 9.vi.89, 16.vii.89, FRANCE [Cavalaire, Var] (T.H.F.). Primarily a parasitoid of *Diprion* species (Hymenoptera, Diprionidae), also attacking larvae of macrolepidoptera, especially those feeding on *Pinus*. Apparently not previously recorded from *lunaris*. The puparia of *Drino* species are remarkable in being covered in dense, short pilosity.

**Drino lota** (Meigen). *Deilephila elpenor* (L.): 1 male, possibly part of a larger brood, l., 1976, Hampshire (A.D.). Sphingidae are the chief hosts, with brood sizes of up to 27 known. Other large lepidopterous larvae have also been recorded as hosts.

**Carcelia gnava** (Meigen). *Malacosoma neustria* (L.). 1 male, l., vi.64, Devon (A.D.); *Dasychira pudibunda* (L.): 1 female, 1931, Hampshire

(T.E.D.P.). Double-brooded, the May/June generation attacking *neustria* and the July/August emergence attacking *pudibunda*. Has also been recorded from *Phalera bucephala* (L.). *Leucoma salicis* (L.) and *Arctia caja* (L.).

**Carcelia lucorum** (Meigen). *Arctia caja* (L.): b. of 5 females, pp., Tyne and Wear (D.A.S.); b. of 1 male, 4 females, pp., Devon (J.H.P.); b. of 5 males, 1 female, pp., Yorkshire (P.W.); 1 male, l. or pp., em. 4.vii.87 (K.C.G.); 7 males, 4 females in 2bs, pp., 3.vi.89, vi.89, vi-vii.89, Cambridgeshire (D.Y.); *Phragmatobia fuliginosa* (L.): b. of 1 male, 3 females, pp., iv.84, v.84, Buckinghamshire (B.T.P.); b. of 2 males, 1 female, l. or pp., Derbyshire (B.S.); ? *P. fuliginosa*: b. of 3 males, 2 females, pp., 17.vii.88, as cocooned prepupa, 18.vii.88, 10.viii.88, Cumbria (M.R.S.). Parasitic on the larger Arctiidae, passing the winter in the host larva and emerging in May or June to pupate, usually in the host cocoon. There appears also to be at least a partial midsummer generation.

**Senometopia pollinosa** (Mesnil). *Bupalus piniaria* (L.): 2 males, 1 female, p., 27.ix.78, v-vi.79, 9.vi.-6.vii.79, Burghfield Common, Berkshire (M.R.S.). A British record from this host is given by Wainwright (1940), and there are continental records by several authors. A specialist parasitoid of *piniaria* but also recorded from *Semiothisa liturata* (Clerck).

**Senometopia sussurans** (Rondani). Indet. geometrid on low plants: 1 male, p., vii.87, viii.87, ITALY [Iesa, 40 km. south of Siena, Tuscany] (M.R.S.). There appears to be no host record for this species.

**Erycia festinans** (Meigen). *Melitaea cinxia* (L.): 1 female, p., iv.77, v.77, FRANCE [Dordogne] (R.R.A.). A specific parasitoid of genera related to *Melitaea* and *Euphydryas*.

**Erycia furibunda** (Zetterstedt). *Euphydryas aurinia* (Rottemburg): 1 female, p., ix.75, vi.76, 24.vi.76, Pengwern Common, Gower, Glamorgan (R.R.A.). This species is very similar to *festinans*. It has been reared from *E. aurinia* in Britain previously (Wainwright, 1928, as *E. fatua*).

#### Tribe GONIINI

**Eumea linearicornis** (Zetterstedt). Indet. noctuid, probably *Agrochola litura* (L.) or *Orthosia gracilis* (Denis & Schiffermüller), in spun shoots of Michaelmas Daisy (*Aster* sp.): 2 females, 24.vi.78, 15-16.viii.78, Abney Park Cemetery, London (R.A.S.). Recorded from several micro-lepidoptera larvae; also from *Cosmia pyralina* (L.) (Hammond & Smith, 1955).

**Pales pavidia** (Meigen). *Zygaena lonicerae* (Scheven): 2 males, l., 14.vi.83, 9.vii.83, and b. of 3 (1 male, 1 female em.), 25.v.88, 15.vi.88, 5.vii.88, also b. of 3 (1 female em.), l., 25.vi.88, 5.vii.88, Berkshire (B.T.P.); 7 males, 9 females, pp., vi.88, 20-30.vi.88, Yorkshire (T.H.F.); 3 males, l., 7.vi.88,



4.vii.88, Warwickshire (K.C.G.); *Vanessa atalanta* (L.): 1 female, p., 15.vii.70, FRANCE [Corsica] (M.R.S.); *Aglais ichnusa* (Hübner): 1 female, p., 15.vii.70, FRANCE [Corsica] (M.R.S.); *Malacosoma neustria* (L.): 1 male, 1 female, l., 25.vi.61, 6.vii.61, County Clare (E.C.P-C.); *Polyphoca ridens* (Fabricius): 1 male, l., 24.vi.89, 9.vii.89, Northamptonshire (B.S.); *Agriopsis leucophaearia* (Denis & Schiffermüller): 1 female, pp., 13.vi.78, 28.vii.78, London (R.A.S.); *A. leucophaearia* or *Theria rupricapraria* (Denis & Schiffermüller): 1 female, l., 2.vi.80, 13.vi.80, 1980, Berkshire (M.R.B.); *Phalera bucephala* (L.): 1 female, pp., viii.76, 23.viii.76, Derbyshire (F.H.); *Ptilodon capucina* (L.): 1 male, l., 18.vi.80, 1980, Berkshire (B.T.P.); b. of 1 male, 1 female, l., 24.vii.78, Buckinghamshire (M.R.S.); *Leucoma salicis* (L.): 5 (1 male, 4 unsexed), l., 29.vi.73, 3-14.vii.73, 20-30.vii.73, and 1 male, p., 29.vi.73, 6.vii.73, 24.vii.73, also 1 male, l., 23.vii.73, 26.vii.73, 11.viii.73, Lancashire (M.R.S.); *Noctua pronuba* (L.): b. of 6 (2 males, 1 female em.) l., 22.ix.75, xii.75, 25-29.ii.76, Yorkshire (P.W.); *Orthosia cruda* (Denis & Schiffermüller): 5 males, 4 females, l., vi.87, 10-21.vii.87, FRANCE [Var] (T.H.F.); *Orthosia stabilis* (Denis & Schiffermüller): 2 males, 2 females, l., viii.82, 10-14.vii.88, Yorkshire (T.H.F.); 1 male, l., 10.vii.82, vii.82, viii.82, Dumfriesshire (M.R.S.); 2 males, l., vi.87, 7-12.vii.87, and 1 male, 1 female, l., 9.vi.89, 10.vii.89, FRANCE [Var] (T.H.F.); *Orthosia* sp.: 2 males, 1 female, l., 12.vii.80, 1980, Berkshire (B.T.P.); *Mythimna straminea* (Treitschke): 1 male, 1 female, l., 3.vi.89, 30.vi.89, Cambridgeshire (B.S.); *Mythimna ? pallens* (L.): b. of 2 females, l., 19.vi.75, 16.vi.75, Hampshire (M.R.S.); *Mythimna* sp.: 1 female, l., 4.v.79, 25.vi.79, 3.vii.79, Berkshire (M.R.S.); 1 female, l., 23.v.84, 24.v.84, 14.vi.84, Berkshire (B.T.P.); *Acrionicta alni* (L.): 1 female, p., 13.vii.76, 1.viii.76, 22.viii.76, Essex (G.B./M.R.S.); *Acrionicta rumicis* (L.): 1 female, l., 17.viii.77, 10.ix.77, Britain (origin otherwise obscure); *Agrochola litura* (L.): 1 male, l., 10.vii.78, 14.viii.78, London (R.A.S.); *Catocala nymphagoga* (Esper): 1 male, 1 female, l., 16.vi.88, 23.vi.88, FRANCE [Var] (T.H.F.). A common polyphagous species, recorded from numerous macrolepidopterous larvae.

**Cyzenis albicans** (Fallén). *Ypsolopha vitella* (L.): 1 male, p., on *Ulmus glabra*, 31.v.88, 15.iv.89, Edinburgh, Midlothian (M.R.S.); *Operophtera brumata* (L.): 1 male, 1 female, p., 6.vii.77, 22.iv.78, Nottinghamshire (F.H.); 6 males, 2 females, p., 7.vi.73, 10-26.iv.74, Derbyshire (M.R.S.); 1 male, 1 female, p., 31.v.73, 7-9.iv.74, Oxfordshire (M.R.S.); 1 female, p., 31.v.73, 17.iv.74, Buckinghamshire (M.R.S.); *Operophtera fagata* (Scharfenberg): 3 males, p., 25.v.66, 19.iii.-2.iv.67, Caernarvon (E.C.P-C.). A common parasitoid of *brumata*, the larva pupating inside the host pupa.

**Cadurcia casta** Rondani. *Choreutis nemorana* (Hübner); 3 (1 female, 1 unsexed em.), p., 9.viii.82, 8.ix.82, FRANCE [Serignan Plage, Hérault]

(M.R.S.); *Nycteola revayana* (Scopoli): 1 female, p., 9.vi.89, 16.vii.89, FRANCE [Cavalaire, Var] (T.H.F.). This small distinctive species appears hitherto to have been reared only from *C. nemorana*, which feeds on *Ficus carica*. This plant was growing within a few metres of the *Quercus suber* from which the above *revayana* was collected. Pupation takes place inside the host pupa.

**Elodia morio** (Fallén). *Gelechia sororculella* (Hübner): 2 females, v.80, 1980, Middleyard Coppice, Worcestershire (A.N.B.S.). Has been bred from numerous microlepidoptera, but we cannot find any records for *sororculella*. Pupation takes place inside the host pupa.

**Sturmia bella** (Meigen). *Vanessa atalanta* (L.): 1 male, 3 females, p., 15.vii.70, FRANCE [Corsica] (M.R.S.); *Aglais urticae* (L.): 2 males, p., 3.viii.87, 23.viii.87, FRANCE [Alpes Maritimes] (M.R.S.); *Aglais ichnusa* (Hübner): 1 male, 2 females, p., 15.vii.70, 18.vii.70, 29.vii.70, FRANCE [Corsica] (M.R.S.); *Inachis io* (L.): 2 males, p., FRANCE (J.H.J.). A common parasitoid of Vanessinae, the larva usually emerging from the host pupa.

**Blepharipa pratensis** (Meigen). *Lymantria dispar* (L.): 1 male, p., 10.vi.86, 6.vii.86, iv.87, FRANCE [Var] (T.H.F.); *Catocala nymphagoga* (Esper): 1 male, pp., v.87, iv.88, and 1 female, p., 9.vi.88, 10.iii.89, FRANCE [Cavalaire, Var] (T.H.F.). An important parasitoid of *dispar* on the continent, which has been introduced into North America for the biological control of *dispar*, but apparently otherwise only recorded from *Dendrolimus pini* (L.).

**Masicera pavoniae** (Robineau-Desvoidy). *Saturnia pyri* (Denis & Schiffermüller): b. of 18 (1 male, 8 females seen), p., 30.vii.86, iv.87, 14.v.87, FRANCE [Gard] (G.N.B.). Usually reared from *Saturnia* species but has also been recorded from *Acherontia atropos* (L.) and *Notodonta ziczac* (L.)

**Masicera sphingivora** (Robineau-Desvoidy). *Nymphalis polychloros* (L.): b. of 1 male, 1 female, p., on *Prunus*, 31.v.74, 20.vi.74, 8-10.vii.74, FRANCE [St Maximin, Var] (M.R.S.); 3 males, 2 females, p., on *Celtis australis*, 20.v.74, 4.vi.74, 20.vi.74, FRANCE [Les Arcs, Var] (M.R.S.). Members of the genus *Deilephila* are the most favoured hosts, but it has also been recorded from other Lepidoptera including one butterfly, *Aporia crataegi* (L.).

**Frontina laeta** (Meigen). *Smerinthus ocellata* (L.): b. of 10 (2 males, 4 females dissected from puparia), 30.viii.87, parasitoid larvae emerged 22.ix.87, Bramshill, Hampshire (B.T.P.). In Britain this uncommon species has been recorded only from *S. ocellata* (Hammond & Smith, 1953), but on the continent also from *Laothoe populi* (L.) and *Sphinx ligustri* (L.).

## Tribe TACHININI

**Tachina grossa** (L.). *Lasiocampa quercus* (L.): 1 male, p., 1982, Surrey (B.T.P.). The largest European tachinid, regularly attacking larvae of the Lasiocampidae, and emerging as an adult from the host pupa.

## Tribe NEMORAEINI

**Nemoraea pellucida** (Meigen). *Orthosia stabilis* (Denis & Schiffermüller): 1 female, p., vi.89, 18.vii.89, FRANCE [Cavalaire, Var] (T.H.F.). Previously recorded from *stabilis* by Wainwright (1928), but known also from other medium sized macrolepidoptera.

## Tribe LINNAEMYIINI

**Linnaemyia vulpina** (Fallén). *Lycophotia porphyrea* (Denis & Schiffermüller): 1 male, 3 females, pp., 31.iii.79, vi.79, 29.vi-15.vii.79, Berkshire (M.R.S.). Commonly bred from *porphyrea*, occasionally from other noctuid species.

**Linnaemyia rossica** Zimin. *Xestia agathina* (Duponchel): 1 male, 1., 3.iv.85, 31.v.85, Glen Affric, Inverness-shire, (E.C.P-C.). This is the first British host record for *rossica*. Audcent (1942) lists only continental records for *Linnaemyia haemorrhoidalis* (Fallén), which has not been shown to occur in Britain.

**Lypha dubia** (Fallén). *Operophtera brumata* (L.): 2 males, pp., 31.v.73, 7-11.iv.74, Buckinghamshire (M.R.S.); 1 male, pp., 31.v.73, 14.iv.74, Oxfordshire (M.R.S.); indet. tortricid larva in folded frond of *Pteridium* under *Quercus*: 1 male, pp., 26.vi.83, 1984, Inchcailloch, Loch Lomond (K.P.B.). A common and important parasitoid of *brumata*, flying in spring from April until June. It is often seen sunning itself on tree trunks in deciduous woodland.

## Tribe ERNESTIINI

**Ernestia rudis** (Fallén). *Orthosia stabilis* (Denis & Schiffermüller): 1 male, 1., 6.vi.88, 4.v.89, FRANCE [Cavalaire, Var] (T.H.F.). On the continent a very important parasitoid of *Panolis flammea* (Denis & Schiffermüller). In view of the fact that *Ernestia vagans* (Meigen) and *E. rudis* are easily confused, and that a series of parasitoids reared from *flavicornis* which was examined by him and found to consist solely of *vagans*, Dr Herting considers that the record of *rudis* from this host cited by Lundbeck (1927) is more likely to be *vagans*. The specimen bred from *Polyploca ridens* (Fabricius) by Taylor (1938) as *rudis* was later determined by Dr Herting to be *vagans*, (Herting, 1965).

**Ernestia vagans** (Meigen). *Achlya falvicornis* (L.): 1 male, 2 females, pp., 11.vi.81, 25.iv.-8.v.82, Flanders Moss, Stirlingshire (M.R.S.). Bred only from *Achlya*, and from *Polyploca* by Taylor (1938), (see under *rudis*).

**Eurithia consobrina** (Meigen). *Lacanobia oleracea* (L.): 2 females, 1., 1.x.80, 9.viii.81, Broad Street Station, London (R.A.S.); *Xanthia gilvago* (Denis & Schiffermüller). 1 female and b. of 2 females, 1., 3.vi.84, 6.vii.84, 20.v.85, Preston, Lancashire (P.S.). Apparently a specialist parasitoid of *Mamestra* and related genera, but also reported from *Cosmia trapezina* (L.) and *Abrostola triplasia* (L.).

#### Tribe PELATACHININI

**Pelatachina tibialis** (Fallén). *Aglais urticae* (L.): 1 male, 1., 8.vi.80, 18.vi.80, em. 1980, Perthshire (J.R.M.); *Aglais ichnusa* (Hübner): 3 bs of 1-2 (unsexed), 23.vii.73, FRANCE [Corsica] (M.C.S.). Parasitic chiefly on vannessine larvae but also recorded from some noctuids.

#### Tribe NEAERINI

**Neoplectops pomonellae** (Schnabl & Mokrzecki). ? *Gypsonoma* sp. in shoots of *Populus nigra*: 1 female, 19-31.vii.87, ix.87, ITALY [Iesa, 40 km S. of Siena, Tuscany] (M.R.S.). We do not know of previous rearing records for this species.

**Phytomyptera cingulata** (Robineau-Desvoidy). *Nemopogon cloacella* (Haworth): 11 males, 12 females, 1. or pp., in *Phellinus pini* on live *Pinus*, 1.v.82, 5.vi-4.vii.82, Perthshire (M.R.S.); *N. cloacella* or *Schiffermulleria similella* (Hübner): 1 female, 1. or pp., in rotting *Pinus*, 9.iv.82, 22.iv.82, Perthshire (M.R.S.); *Nemopogon personella* (Pierce & Metcalfe): 3 males, 7 females, e., or pp., in bracket fungus on live *Quercus*, ix.81, vi.82, Berkshire (J.A.O.); *Esperia sulphurella* (Fabricius): 6 males, 8 females, 1. or pp., 16.iv.76, 25.v-30.vi.76, in dead *Prunus* bark, Warwickshire (M.R.S.); 1 male, 1. or pp., in *Malus* bark, v.87, Dorset (M.M.B.); oecophorid in dead *Quercus* bark: 1 male, 1 female, 1. or pp., 20.iv.85, 10-17.v.85, Kent (E.C.P-C.); *Teleiodes sequax* (Haworth): 1 female, 1., 23.vi.84, 17.vii.84, Aberdeenshire (E.C.P-C.); *Acleris variegana* (Denis & Schiffermüller): 1 female, 1. or pp., on *Berberis*, 19.vii.70, 12.viii.70, Aberdeenshire (E.C.P-C.); indet. tortricid on *Teucrium*: 1 male, 1., 23.vii.70, 12.viii.70, Aberdeenshire (E.C.P-C.). This species is recorded from a wide range of microlepidopterous larvae, but especially those feeding in fungi or dead wood.

**Phytomyptera nigrina** (Meigen). *Caloptilia elongella* (L.): 3 female, 1., em. vi.76, SWITZERLAND [Eggliigraben, BL] (S.E.W.); *Caloptilia rufipennella* (Hübner): 1 female, 30.vi.79, 17.vii.79, FRANCE [Le Fays, Haute Saone] (S.E.W.); *Epinotia immundana* (Fischer von Röslerstamm): 3 males, 1., 12.vii.79, vii.79, viii.79, Hampshire (M.R.S.); *Archips rosana* (L.): 3 males, 1., (origin obscure); *Adaina microdactyla* (Hübner): 1 male, 1., 23.iv.79, 15.v.79, Oxfordshire (M.R.S.). Known from a range of microlepidoptera.

## Tribe SIPHONINI

**Ceromyia bicolor** (Meigen). *Lasiocampa trifolii* (Denis & Schiffermüller): b. of 3 males, 6 females, mature l., 1983, Hayling Island, Hampshire (A.R.C.); *Lasiocampa quercus* (L.): 1 female, young l., 12.viii.75, 20.viii.75, 11.ix.75, Loch Achilty, Ross and Cromarty (M.R.S.); b. of 24, mature l., Hoy, Orkney (R.I.L.). This species seems to be solitary in small host larvae, but to develop in sizeable broods in the large ones from which it is more commonly reared. It can overwinter as a puparium.

**Actia crassicornis** (Meigen). *Depressaria conterminella* (Zeller): 1 male, l., 30.v.61, 24.vi.61, Ballyshannon, Donegal (E.C.P-C.). The larvae of depressariine oecophorids are the usual hosts.

**Actia pilipennis** (Fallén). *Anthophila fabriciana* (L.): 2 males, 4 females, l., 30.v.61, 24.vi.61, Perthshire (M.R.S.); 2 males, 3 females, 13.vi.81, 1.vii.81, vii.81, Selkirkshire (M.R.S.); 1 male, 2 females, 2.vii.77, 11.vii.77, 20-28.vii.77, Yorkshire (T.H.F.); *Eutromula pariana* (Clerck): 1 female, l., 26.vii.84, 29.vii.84, 29.vii.84, FRANCE [Alpes Maritimes] (M.R.S.); *Hypatima rhomboidella* (L.): 1 female, l., 29.vi.83, 19.vii.83, Cornwall (J.L.G.); *Lozotaenia forsterana* (Fabricius): 2 females, l., 23.v.84, Cornwall (J.L.G.); *Acleris rufana* (Denis & Schiffermüller): 1 male, l., 22.viii.54, 24.ix.54, Argyllshire (E.C.P-C.). Known to parasitise a wide range of microlepidoptera.

**Peribaea tibialis** (Robineau-Desvoidy). *Cyclophora puppillaria* (Hübner): 1 male, l., 18.v.89, 19.v.89, 9.vi.89, FRANCE [Var] (T.H.F.); *Pachycnemia hippocastanaria* (Hübner): 1 female, l., 23.v.88, 2.vi.88, 16.vi.88, and 1 male, 1 female, l., 29.v.89, 31.v.89, 11-16.vi.89, FRANCE [Var] (T.H.F.); indet. geometrid on *Cytisus*: 1 female, l., 16.v.89, 20.v.89, 31.vi.89, FRANCE [Drôme] (T.H.F.). Herting (1968) showed that what had hitherto been regarded as *P. tibialis* was a complex of two species, *P. tibialis* and *P. apicalis* (Robineau-Desvoidy). He gives *Lithosia complana* (L.), *Phragmatobia fuliginosa* (L.) and *Lacanobia oleracea* (L.) as definite hosts of *tibialis*, whose host range therefore appears to be broad.

**Ceranthia abdominalis** (Robineau-Desvoidy). *Cyclophora puppillaria* (Hübner): 2 females, l., on *Myrtus communis*, 18.v.89, 23.v.89, 14.vi.89, FRANCE [Var] (T.H.F.). Previously reared from *Cyclophora pendularia* (Clerck), *C. annulata* (Schulze) and *C. porata* (L.).

**Ceranthia lichtwardtiana** (Villeneuve) (det. Stig Andersen). *Eupithecia* sp. on *Betula*: 1 male, l., viii.87, viii.87, 27.vi.88, Hoy, Orkney (R.I.L.). We can find no reference to previous rearings, but its congener *C. tristella* Herting has been reared from *Eupithecia silenata* Standfuss (Herting, 1966).

**Siphona cristata** (Fabricius) (det. Stig Andersen). *Mamestra brassicae* (L.): b. of 8 (2 males, 1 female, 4 unsexed em.), l., 3.ix.82, 14.ix.82, 26.vii-4.viii.83, South Edinburgh (M.R.S.); b. of 12 (6 females, 6 unsexed)

l., ix.73, x.73, vii.74, East Didsbury, Manchester (M.R.S.); indet. noctuid on *Clematis montana*: b. of 17 (3 males, 4 females, 3 unsexed em.), l., 28.viii.80, 2.ix.80, 2-18.viii.81, Reading, Berkshire (B.T.P.); indet. noctuid on low plants: b. of 23 (8 males, 12 females, 3 unsexed), l., 9.viii.82, 12.viii.82, 4.viii.83, Drayton St. Leonard, Oxfordshire (M.C.S.). A gregarious parasitoid of large lepidopterous larvae, particularly Noctuidae.

### Tribe VORIINI

**Campylochaeta inepta** (Meigen). *Dendrolimus pini* (L.): b. of 3 (1 female, 1 unsexed em.), l., 30.vii-4.viii.86, 10.ix.86, 1987, FRANCE [Villars-Colmars, Alpes de Haute Provence] (M.R.S.); *Ematurga atomaria* (L.): 6 males, 1 female, l., 28.vii.81, 12.viii.81, 3.vi.82, Cors Goch NR, Anglesey (M.R.S.); *Anarta myrtilli* (L.): 1 male, l., em. 21.iii.77, Meathop Moss NR, Cumbria (W.A.W.). Parasitic chiefly on geometrid larvae occurring on heaths and moorland, but known also from other macrolepidoptera occurring in similar habitats.

**Blepharomyia pagana** (Meigen). *Erannis defoliaria* (Clerck): 2 females, pp., 20.v.75, 21.iv.76, Hampshire (M.R.S.); 1 male, 1 female, pp., em. 1985, Sussex (A.R.C.). Has been reared from various spring-feeding geometrid larvae.

**Ramonda spathulata** (Fallén). *Ochropleura praecox* (L.): 1 male, 1 female, p., em. 28.vi-1.vii.87, Lancashire (K.C.G.); ? *Noctua pronuba* (L.): b. of 2 males, 3.iii.78, 11.iii.78, 1978, London (R.A.S.); *Xestia xanthographa* (Denis & Schiffermüller): 6 males, 12 females and b. of 2 males, l., 2.iii.79, 6-14-iv.79, 16-24.v.79, Berkshire (M.R.S.); b. of 2 males, xii.77, 26.ii.78, 7.v.78, and b. of 2 males, 3.iii.78, 20.iii.78, 15.v.78, also 1 male, 1 female, 3.iv.79, 13.iv.79, 13.v.79, London (R.A.S.); 1 female and b. of 2 females, 3.ii.76, 10.ii.76, 20-23.ii.76, Northumberland (D.A.S.); *Mythimna ? pallens* (L.): b. of 6 (4 females em.), l., 5.vi.75, 12.vi.75, 2.vii.75, Lancashire (M.R.S.); *Apamea ? crenata* (Hufnagel): 1 female, l., 2.ix.75, xii.75, 1976, Yorkshire (P.W.). A regular parasitoid of low-feeding noctuid larvae in grassland.

**Athrycia impressa** (Wulp). *Anarta myrtilli* (L.): 1 male, 5.vii.78, 19.vii.78, Surrey (M.R.S.). This specimen was determined by Dr Herting and is the first record of *impressa* from Britain.

**Athrycia trepida** (Meigen). *Orthosia gothica* (L.): 1 female and 2 bs of 1 male, 1 female, pp., 22.vi-8.vii.78, 15.v-3.vi.79, London (R.A.S.). Parasitic on larvae of various Noctuidae.

**Voria ruralis** (Fallén). *Autographa gamma* (L.): b. of 4 (1 male, 2 females em.), l., 6.viii.89, 19.viii.89, Cornwall (J.L.G.); *Abrostola triplasia* (L.): b. of 2 females, l., 30.vii.76, 1.x.76, Kirkcudbrightshire (T.H.F.); plusiine sp. on *Mentha*: b. of 5 males, 3 females, l., 31.x.87, 4.v.88, 15-20.v.88, Midlothian (K.P.B.). A specialist parasitoid of Plusiinae, but also recorded

from some other noctuids, *Arctia* species, and once from *Vanessa cardui* (L.). In the broods recorded here the puparia formed in the host's larval skin side by side, and in the largest brood the row of puparia extended along the entire length of the host's body.

**Cyrtophleba ruricola** (Meigen). *Pachynemias hippocastanaria* (Hübner): b. of 2 females, l., 23.v.88, 2.vi.88, 16.vi.88, and b. of 2 females, l., 9.vi.89, 14.vi.89, also b. of 1 male, 2 females, l., 28.v.89, 14.vi.89, 25.vi.89, FRANCE [8km N. of Frejus, Var] (T.H.F.); *Ceramica pisi* (L.): b. of 5males, 6 females, pp., 1.vi.86, 19-23.iv.87, FRANCE [St Paul-en-Forêt, Var] (T.H.F.). Usually parasitic on larvae of Noctuidae. The puparium is strikingly rotund, smooth and very glossy, with the terminal tubercle displaced dorsally.

**Thelaira nigripes** (Fabricius). *Diaphora sordida* (Hübner): 1 female, l., 3.viii.87, 13.viii.87, 22.vi.88, FRANCE [Valdeblorre, Alpes Maritimes] (M.R.S.). Recorded from various Arctiidae but, so far as we know, not previously from *sordida*. Also recorded from some Noctuidae and Lasiocampidae.

Most of the foregoing material is now in the collections of the National Museums of Scotland, a few specimens remaining with T.H. Ford. One specimen each of *Exorista nova* and *Cadurcia casta* were retained by Dr Herting for the collections of the Staatliches Museum für Naturkunde, Stuttgart.

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### Delayed wing inflation in *Orthosia incerta* Hufnagel (Lep.: Noctuidae) Clouded Drab.

In January and February 1990 I dug many pupae of *O. incerta* from the bases of deciduous trees (especially alder and white poplar) near Banff, Grampian region. Moths began to emerge in March, invariably in the morning between 08.00 and 11.00 hours GMT. On 6.3.90 two moths emerged about 10.00 hours. One inflated its wings normally after the usual few minutes rest, but the other, a male, hid in a dark corner of the breeding cage with its wings uninflated until I disturbed it at 19.00 hours. Then it became active, and started to inflate its wings at 19.15 hours. Apparently it had some difficulty, the hind wings being inflated first, but by 20.30 hours all the wings were fully expanded and the resulting moth was normal in spite of the delay except that the forewings were not quite flat.

All the other moths which emerged were normal in every way.— ROY LEVERTON, Ordiquhill, Cornhill, Banffshire AB45 2HS.